

ing an optical characteristic of the liquid crystal by applying an electric field across the liquid crystal.

**10.** The flexible display device of claim **1**, comprising within the housing a battery for supplying power to the circuit part.

**11.** The flexible display device of claim **10**, wherein the battery has flexibility.

**12.** A production method of a flexible display device, comprising:

a step of providing a circuit part having rigidity, a housing internally having an upper face and a bottom face, and a display panel;

a step of disposing the circuit part on a circuit board;

a step of disposing the circuit board on the bottom face of the housing; and

a step of disposing the display panel on the housing, wherein,

the display panel, the circuit board, and the housing have flexibility at least along a first direction which is perpendicular to the plane of the display panel; and

in the step of providing the circuit part, the housing, and the display panel, given a length  $2a$  of the circuit part along a second direction which is parallel to the plane of the display panel, a thickness  $b$  of the circuit part along the first direction, a distance  $d$  between the bottom face and the upper face of the housing or between the bottom face and a lower face of the display panel, and a minimum radius of curvature  $r$  of the bottom face of the housing determined when the housing is curved along the first direction, the circuit part and the housing are selected in sizes satisfying the relationship:

$$a \leq [d^2 - b^2 + 2 \cdot r \cdot (d - b)]^{(1/2)}.$$

**13.** The production method of a flexible display device of claim **12**, wherein the radius of curvature  $r$  is a radius of curvature of the bottom face when the housing is curved so

that the upper face of the housing or the lower face of the display panel abuts with the circuit part.

**14.** The production method of a flexible display device of claim of claim **12**, wherein, when the radius of curvature  $r$  is in a range greater than 1 mm but smaller than 200 mm, in the step of providing the circuit part, the housing, and the display panel, a housing is provided such that the distance  $d$  is in a range greater than 0.5 mm but smaller than 10 mm.

**15.** The production method of a flexible display device of claim **14**, wherein, when the radius of curvature  $r$  is in a range greater than 5 mm but smaller than 60 mm, in the step of providing the circuit part, the housing, and the display panel, a housing is provided such that the distance  $d$  is in a range greater than 1 mm but smaller than 3 mm.

**16.** The production method of a flexible display device of claim **12**, wherein the radius of curvature  $r$  is a radius of curvature which is required of the bottom face at the position of the circuit part when the housing at the position of the circuit part is curved to a maximum extent along the first direction.

**17.** The production method of a flexible display device of claim **16**, wherein, when the radius of curvature  $r$  is in a range greater than 1 mm but smaller than 30 mm, the distance  $d$  is set in a range greater than 0.5 mm but smaller than 3 mm.

**18.** The production method of a flexible display device of claim **12**, wherein the circuit part is a semiconductor chip, a semiconductor circuit board, a resistor, or a capacitor.

**19.** The production method of a flexible display device of claim **12**, wherein the display panel includes a pair of flexible substrates at least one of which is transparent, and liquid crystal sealed between the pair of flexible substrates, and performs displaying by altering an optical characteristic of the liquid crystal by applying an electric field across the liquid crystal.

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